

lished by SCHULZE (1968); Trögen Klamm section-group B (N 46°28'00" / E 14°30'24"), D (N 46°28'03" / E 14°30'33"), F1 (N 46°28'02" / E 14°30'12") published by MOSHAMMER (1989, 1990).

**Derivation of name:** After the generic name of the trilobite *Bronteus transversus* (BARRANDE) (Suess, 1858).

**Synonyms:** Gailthaler Kalk (LIPOLD, 1856b: p. 350); rötlich-graue bis fleischrote Oolith-Marmore (TELLER, 1886a); fleischrote Kalke des unt. Unterdevon (F 2) (SCHÖNENBERG, 1965: Fig. 2, p. 31); rotgeflammt Kalk (SCHULZE, 1968); fleischroter Kalk (SCHULZE, 1968); Rote Flaserkalke ("F2") (TESSENSOHN, 1974a); Bunter Bronteus-Kalk (SCHÖNLAUB, 1979); "dehiscens"-Kalk (MOSHAMMER, 1989).

**Lithology:** Red flaser limestone with interbedded crinoidal limestones.

**Fossils:** Bivalves, brachiopods, cephalopods, corals (rare), conodonts, crinoids, gastropods, ostracods, tentaculites, trilobites.

**Origin, facies:** Marine limestone, pelagic unit.

**Chronostratigraphic age:** Pragian–Emsian.

**Biostratigraphy:** *kitabicus* and *gronbergi* conodont zones (SCHULZE, 1968; MOSHAMMER, 1989).

**Thickness:** Approx. 30 m.

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Platy Limestone (conformable contact), Orthoceratid Limestone (conformable contact).

**Overlying unit(s):** Reef Limestone (conformable contact); Seeland Crinoidal Limestone (conformable contact); Seeberg Coral-Crinoidal Limestone (conformable contact); Limestone, Lydites (conformable contact).

**Lateral unit(s):** Seeberg Shale.

**Geographic distribution:** Karavanke Mountains (Eisenkappel and Seeberg area).

**Remarks:** -

**Complementary references:** TIETZE (1870), TELLER (1886b), PENECKE (1887), SCHULZE (1964), SCHÖNENBERG (1965, 1967), KUPSCH et al. (1971), TESSENSOHN (1974b), SCHÖNLAUB (1979), MOSHAMMER (1987), RANTITSCH (1990, 1992b), RAMOVŠ (1999), SCHÖNLAUB & HISTON (1999, 2000).

### Seeberg-Schiefer / Seeberg Shale

THOMAS J. SUTTNER

**Validity:** Invalid; lithological characters and biostratigraphic implications provided by LOESCHKE & ROLSER (1971); name first mentioned by TESSENSOHN (1974a).

**Type area:** ÖK50-UTM, map sheet 4114 Bad Eisenkappel (ÖK50-BMN, map sheets 212 Vellach, 213 Bad Eisenkappel).

**Type section:** -

**Reference section(s):** About 1 km southwest of Sadonig Höhe (LOESCHKE & ROLSER, 1971: p. 154), N 46°25'57" / E 14°35'10".

**Derivation of name:** After Seeberg Pass (TESSENSOHN, 1974a: p. 113).

**Synonyms:** Devonische Vulkanite in Vellach (LOESCHKE & ROLSER, 1971: p. 154).

**Lithology:** Greywacke, shale with interbeds of siliceous shale and volcanites, bedded limestone.

**Fossils:** Conodonts.

**Origin, facies:** Pelagic marine deposits dominated by shales, siliceous shales, tuffs and volcanites; note wrong color code in the ASC 2004.

**Chronostratigraphic age:** According to LOESCHKE & ROLSER (1971: Fig. 4, p. 154) Emsian–Famennian age is concluded based on conodonts that were obtained from limestone intercalations at the base of the sequence at the village of Vellach.

**Biostratigraphy:** -

**Thickness:** Few cm to 20 m (following LOESCHKE & ROLSER, 1971).

**Lithostratigraphically higher rank unit:** -

**Lithostratigraphic subdivision:** -

**Underlying unit(s):** Bronteus Limestone (conformable contact).

**Overlying unit(s):** Bronteus Limestone (conformable contact).

**Lateral unit(s):** Bronteus Limestone.

**Geographic distribution:** Karavanke Mountains (Eisenkappel and Seeberg area).

**Remarks:** -

**Complementary references:** ROLSER (1968), KUPSCH et al. (1971), SCHÖNLAUB (1979), TESSENSOHN (1983), SCHÖNLAUB & HISTON (1999, 2000).

### Riffkalk / Reef Limestone

THOMAS J. SUTTNER

**Validity:** Invalid; first observed by TIETZE (1873); general lithological description by KUPSCH et al. (1971); biostratigraphy by SCHULZE (1968); facies and biostratigraphy of an equivalent, but more distally deposited unit within the Trögen Group by MOSHAMMER (1989, 1990).

**Type area:** ÖK50-UTM, map sheet 4114 Bad Eisenkappel (ÖK50-BMN, map sheets 212 Vellach, 213 Bad Eisenkappel).

**Type section:** -

**Reference section(s):** Christophorus-Fels (SCHÖNENBERG, 1965: Fig. 2, p. 32), N 46°26'08" / E 14°33'30"; Grosser Pasterk (N 46°26'25" / E 14°32'29"), Rapold (N 46°26'16" / E 14°33'13") published by SCHULZE (1968); Trögen Klamm section-group B (N 46°28'00" / E 14°30'24"), C (N 46°27'59" / E 14°35'03"), E (N 46°28'00" / E 14°30'30"), F1 (N 46°28'02" / E 14°30'12"), F2 (N 46°28'01" / E 14°30'18") published by MOSHAMMER (1989, 1990).

**Derivation of name:** After facies characters.

**Synonyms:** Durch Corallen ausgezeichnete obersilurische Kalke (TIETZE, 1873: p. 183–184); Rapoldriff (SCHULZE, 1968); Devonkalke ungegl. (SCHÖNENBERG, 1965: Fig. 2, p. 31); Riff- und Riffschuttkalk (KUPSCH et al., 1971); massive Riffschuttbrekzie (MOSHAMMER, 1990: Fig. 2).

**Lithology:** Bioclastic limestone.

**Fossils:** Brachiopods, calcareous algae, conodonts, corals, ostracods, stromatoporoids.

**Origin, facies:** Marine limestone, neritic unit.

**Chronostratigraphic age:** Emsian–Famennian.

# Austrian Stratigraphic Chart 2004 - Paleozoic

(sedimentary successions)

Austrian Stratigraphic Commission



ERA	SYSTEM / PERIOD / SERIES / EPOCH	STAGE / AGE	DURATION Ma	Global Classification					
				ERATHM / ERA	SYSTEM / PERIOD / SERIES / EPOCH				
PALEOZOIC	PERMIAN	CHANGHSINGIAN / Dorashanian	251	PERMIAN	MID PERMIAN / GUADALUPIAN				
		WUCHIAPINGIAN / Dzhulfian	255						
		CAPITANIAN	260						
		WORDIAN	265						
		ROADIAN	270						
		PERMIAN	LOWER PERMIAN / CISURALIAN			KUNGURIAN	275		
						ARTINSKIAN	280		
						SAKMARIAN	285		
						ASSELIAN	290		
		PERMIAN	TRIAS			GZHELIAN	295	TRIAS	U. CARBONIFEROUS / PENNSYLVANIAN
KASIMOVIAN	300								
MOSKOVIAN	305								
BASHKIRIAN	310								
TRIAS	LOWER CARBONIFEROUS / MISSISSIPPIAN			SERPUKHOVIAN	315				
				VISEAN	320				
				TOURNAISIAN	325				
PERMIAN	DEVONIAN			FAMENNIAN	350	DEVONIAN	UPPER DEVONIAN		
				FRASNIAN	355				
				GIVETIAN	360				
		EIFELIAN	365						
		DEVONIAN	LOWER DEVONIAN	EMSIAN	370				
				LOCHKOVIAN	375				
		PERMIAN	DEVONIAN	LUDFORDIAN / GORSTIAN	380			DEVONIAN	MIDDLE DEVONIAN
				HOMERIAN / SHEINWOOD	385				
				TELYCHIAN	390				
				AERONIAN	395				
RHUDDANIAN	400								
DEVONIAN	LOWER DEVONIAN			PRAGIAN	405				
				LOCHKOVIAN	410				
PERMIAN	DEVONIAN			WEN-LOCK / LOW	415	DEVONIAN	LOWER DEVONIAN		
				HIRNANTIAN	420				
				LLANDOVERY	425				
		AERONIAN	430						
		RHUDDANIAN	435						
		DEVONIAN	LOWER DEVONIAN	PRAGIAN	440				
				LOCHKOVIAN	445				
		PERMIAN	DEVONIAN	WEN-LOCK / LOW	450			DEVONIAN	UPPER DEVONIAN
				LLANDOVERY	455				
				AERONIAN	460				
RHUDDANIAN	465								
DEVONIAN	LOWER DEVONIAN			PRAGIAN	470				
				LOCHKOVIAN	475				
PERMIAN	DEVONIAN			WEN-LOCK / LOW	480	DEVONIAN	UPPER DEVONIAN		
				LLANDOVERY	485				
				AERONIAN	490				
				RHUDDANIAN	495				
		DEVONIAN	LOWER DEVONIAN	PRAGIAN	500				
				LOCHKOVIAN	505				
		PERMIAN	DEVONIAN	WEN-LOCK / LOW	510			DEVONIAN	UPPER DEVONIAN
				LLANDOVERY	515				
				AERONIAN	520				
				RHUDDANIAN	525				
DEVONIAN	LOWER DEVONIAN			PRAGIAN	530				
				LOCHKOVIAN	535				
PERMIAN	DEVONIAN			WEN-LOCK / LOW	540	DEVONIAN	UPPER DEVONIAN		
				LLANDOVERY	545				
				AERONIAN	550				
				RHUDDANIAN	555				
		DEVONIAN	LOWER DEVONIAN	PRAGIAN	560				
				LOCHKOVIAN	565				



### Legend

- pelagic, offshore, siliciclastic
- pelagic, nearshore, calcareous
- shallow marin, neritic
- terrestrial-continental, coarse clastic
- terrestrial-continental, fine clastic
- evaporite (chloride, sulphate)
- rhyolite, dacite
- (basaltic) andesite, trachyandesite
- basalt
- phyllite
- mixed-facies (in corresponding colors)
- coal (may include several seams)
- ? position/age doubtful/controversial
- | equal units
- \ older unit left \ younger unit right
- hiatus
- unconformity
- GSSP
- Fm. Formation
- Ls. Limestone

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Cutout and English adaptation of the "Die Stratigraphische Tabelle von Österreich 2004": Geological Survey of Austria

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